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REMARKS

Upon entry of this amendment, claims 1, 3, 5, 8-9, 12, 17, 21-25, 27 and 29 are pending in the application.

Independent claims 1, 21, 24 and 27 are being amended to incorporate the hollow collar having a gap extending from about the radially internal surface to about the radially external surface, the gap defining opposing faces, and the collar having a radially internal surface that directly contacts the wall of the process chamber or a groove of the liner. These concepts are at least supported by the second paragraphs on pages 9 and 10 of the Specification.

Claims 3, 5, 8-9, 12, 17, 22-23, 25 and 29 are being amended to cosmetically improve the claims without affecting the scope of the claims; and thus, the scope of the doctrine of equivalents applied to the claim should not be limited under the rules of Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 2002 Lexis 3818 (May 28, 2002).

Claims 31-34 are being added. The new and amended claims are fully supported by the originally filed Specification and original claims, and add no new matter. Thus, entry of the claims is respectfully requested.

Rejection Under 35 U.S.C. §103

1. The Examiner rejected claims 1, 3, 4-8, 12-14, 16, 21-22, 24 and 27-30 under 35 U.S.C. §103(a) as being unpatentable over Wu et al. (US 2003/0192646 A) hereinafter "Wu et al."

An obviousness rejection requires that the cited reference(s) teach or suggest all of the elements of the claim in question:

To establish obviousness, all the claim limitations must be taught or suggested

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by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Claim 1

Claim 1, as amended, is to a magnet assembly for a plasma process chamber having a wall. The magnet assembly comprises a hollow collar comprising a radially internal and external surface, and a cross-section that is absent seams. The collar has a gap extending from about the radially internal surface to about the radially external surface. The gap defines opposing faces, where at least one face has an open end. The collar is sized to diametrically expand to snap fit the wall such that the radially internal surface directly contacts the process chamber wall. The magnet assembly further comprises a cap to seal the at least one open end face and a plurality of magnets in the hollow collar. The magnets are insertable through the open end face.

Claim 1 is patentable over Wu et al. because Wu et al. does not teach or suggest a collar that is sized to diametrically expand to snap fit a wall or liner of the process chamber. However, Wu et al. also does not *suggest* a need for a flexible annular housing that diametrically expands as recited in the claim. Nor does Wu et al. teach or suggest an annular housing that is sized to snap-fit a wall of a process chamber. Nowhere does Wu et al. teach such a structure or motivate derivation of the same. Thus Wu et al. simply does not provide any motivation to derive a diametrically expandable snap fit structure to hold magnets as claimed.

The Office Action argues that it would have been obvious to one of ordinary skill in the art to design a snap fit collar that can expand. Applicant respectfully disagrees. A fixed diameter collar structure as taught by the cited references does not suggest a structure having a flexible expanding diameter or snap-fit structure. The Examiner suggests the motivation arises from the desire for a close fit. However, there are many alternative designs that provide a close fit to the wall of the chamber, such as

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for example, machining the external shape of the component to have a close fit tolerance and placing a ledge on the chamber wall to support the component around the wall. The selection of one of possibly tens of alternative designs that provide a close fit tolerance is clearly based on hindsight and with the knowledge gained from the invention. Moreover, the claimed flexible structure is not motivated by teachings that a fixed diameter structure is adequate, as the flexible diameter structure requires more careful design to make the structure flexible enough to allow snap-fitting, and also thought as to where or what structure in the chamber the claimed structure would be snap fitted to. These design choices and selections are simply not obvious except in hindsight and obviousness rejections should not be based on such hindsight. The cited reference does not teach or motivate an expanding collar sized to diametrically expand to snap fit a wall or liner of a process chamber; and an expanding, snap fit structure is not automatically derived from a desire for a close fit two structures in a chamber.

Further, in assessing non-obviousness, a claimed invention must be considered as a whole:

In making the assessment of differences between the prior art and the claimed subject matter, section 103 specifically requires consideration of the claimed invention 'as a whole.' Princeton Biochemicals, Inc. v. Beckman Coulter, Inc. (Fed. Cir., No. 04-1493, 6/9/05).

The Office Action is ignoring the language of claim taken as a *whole* as Wu et al. because Wu et al. does not teach or suggest the combination of the collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end, the collar being sized such that the radially internal surface directly contacts the process chamber wall, and a cap to seal the at least one open end face. Instead of a cap to seal the open end face, such as with epoxy (Specification, page 10, lines 34-35), Wu et al. teaches a "cover plate joined to the housing 140...by being welded or soldered". (Wu et al., page 3, para. 0051, lines 1-3.) Various problems may arise from welding cover plates as described in

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the following:

Magnet assembly housings sealed by a cover plate can also be difficult to fabricate or assemble. Welding the cover plate typically involves subjecting the magnet assembly contained in the housing to high temperatures that can demagnetize or thermally degrade the magnets. It is also difficult to maintain the magnets aligned in the housing while the cover plate is being welded on to the housing. Often, some of the magnets become misaligned during assembly and this results in the magnet assembly providing an undesirable magnetic field distribution.

(Specification, page 2, line 32 to page 3, line 3.)

Therefore, the synergy of the combination of these elements is simply not taught or suggested by Wu et al.

Amended claim 1 is further patentable over Wu et al. because Wu et al. does not teach or suggest a collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end and that the collar is sized such that the radially internal surface directly contacts the process chamber wall, as in amended claim 1. Instead, Wu et al. teaches "as shown in FIG. 3, an annular housing 140 having a radially outward face 132 and a radially inward facing opening 130." Unlike amended claim 1, the annular housing 140 of Wu et al. does not have a gap extending from about the radially internal surface to about the external surface, but rather a gap extending **along** the radially internal surface of the annular housing 140.

Referring to Figure 5, Wu et al. teaches a magnetic segment 127 and that "the magnetic segments 127 are inserted into the housing 140..." (Wu et al., page 3, para. [0052].) In Wu et al. the radially internal surface of the magnetic segment 127 may come into contact with the interior surface of the annular housing 140, as opposed to the chamber wall, effectively teaching away from amended claim 1. This is the case because in amended claim 1, the hollow collar, characterized by the gap extending from about the radially internal surface to about the external surface of the collar and the gap

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defining opposing faces where at least one face has an open end, **directly contacts** the process chamber wall, unlike magnetic segment 127 of Wu et al.

However, Wu et al. also **does not suggest** the collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end **and** that the collar is sized such that the radially internal surface directly contacts the process chamber wall, as in amended claim 1, because, for example, radially inward facing opening 130 of the annular housing 140 fails to suggest the location of the gap as in amended claim 1. The location of the gap as described in claim 1, allows for the insertion and removal of magnets with increased convenience, because, for example, the collar need not be removed from the chamber wall for this purpose. This is not the case with Wu et al. in which the opening is **along** the radially inward face. The synergy of the combination of the gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end, **and** the collar being sized such that the radially internal surface directly contacts the process chamber wall, is therefore not taught or motivated by Wu et al.

Thus, for at least these reasons, Wu et al. does not render obvious claim 1 nor the claims that depend directly and indirectly therefrom.

Claims 21, 24 and 27

Independent claims 21, 24 and 27 have each been amended to incorporate the limitations as discussed above with respect to amended claim 1, namely, the collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end, and that the collar is sized to diametrically expand and snap fit a wall (claim 21) or liner (claims 24 and 27) such that the radially internal surface directly contacts the process chamber wall or liner. Thus, amended claims 21, 24 and 27 and the claims that depend directly and indirectly therefrom, are patentable over Wu et al.

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for at least the reasons presented above with respect to amended claim 1.

2. The Examiner rejected claims 9-11, 17, 23 and 25-26 under 35 U.S.C. §103(a) as being unpatentable over Wu et al. in view of Quiles et al. (WO 01/91164) hereinafter "Quiles et al."

Claim 1

Claim 9 depends on claim 8 which depends on independent claim 1. Claims 10-11 depend on claim 9 which indirectly depends on claim 1. Claim 17 depends on claim 16 which depends on claim 1.

As discussed above, claim 1 is patentable over Wu et al. because Wu et al. does not teach or suggest the collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end, and that the collar is sized to diametrically expand and snap fit a wall such that the radially internal surface directly contacts the process chamber wall.

Quiles et al., however, fails to make up for the deficiencies of Wu et al. because Quiles et al. also does not teach or suggest such limitations. Instead, Quiles et al. teaches:

The set of three magnets includes a pair of magnets 182, 184 connected by a steel bar 186 is housed within the interior region 132 of the wafer support 130, and is preferably attached to the interior surface of the wall 134 of the workpiece support 130...On the opposite side of the pumping annulus 140 and facing the center of the horseshoe magnet is the third magnet, namely a single individual magnet 188 which is attached to the outer surface of the side wall 110. The three magnets 182, 184, 188 constitute what is referred to in this specification as a tri-magnet apparatus. (Quiles et al., page 6, lines 21-29.)

Quiles et al. teaches a tri-magnet apparatus in which a single individual magnet is attached to the outer surface of the sidewall of the chamber. Therefore, the

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combination of Wu et al. and Quiles et al. fails to teach or suggest the synergy of the combination of limitations in claim 1, the benefits of which are discussed above.

Thus, the combination of Wu et al. and Quiles et al. does not teach or suggest all of the limitations of claim 1. Therefore, for at least these reasons, claim 1 and the claims dependent directly and indirectly therefrom, are patentable over Wu et al. in view of Quiles et al.

Claims 21 and 24

Claim 23 depends on independent claim 21. Claim 25 depends on independent claim 24. Claim 26 depends on claim 25 which depends on claim 24. Independent claims 21 and 24, as amended, have the limitations discussed above with respect to amended claim 1, such as the collar having a gap extending from about the radially internal surface to about the external surface, the gap defining opposing faces where at least one face has an open end, and that the collar is sized to diametrically expand and snap fit a wall or liner such that the radially internal surface directly contacts the process chamber wall or liner. Therefore, for at least the reasons discussed above with respect to amended claim 1, claims 21 and 24 and the claims that depend directly and indirectly therefrom, are patentable over Wu et al. in view of Quiles et al.

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CONCLUSION

The above-discussed amendments are believed to place the present application in condition for allowance. Should the Examiner have any questions regarding the above remarks, the Examiner is requested to telephone Applicant's representative at the number listed below.

Respectfully submitted,
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